

This document summarizes Questions and Answers containing in our Q&A tool.

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1. Definition

All sectors

Indicator

What is the difference between gross domestic consumption, primary energy consumption and TPES (Total Primary Energy Supply)?

They all refer to the total energy consumption of a country. The gross domestic consumption is the terminology used by Eurostat : it includes non-energy uses and international air transport. Primary energy consumption is defined by the Energy Efficiency Directive as the gross domestic consumption without non energy uses. TPES is used by IEA: it includes non-energy uses and excludes international air transport.

What does energy consumption at normal climate means?

A consumption at normal climate is the consumption which would have occurred, with a normal climate over the heating and cooling periods. The normal climate is defined as the average climate observed over a certain period over the past (20 years or more).

What is the difference between primary and final energy consumption?

The primary energy consumption includes the consumption and conversion losses in the energy transformations, i.e. in the energy industries (e.g. power generation, refineries) while the final energy consumption is the sum of the consumption in industry (excluding the energy sector), transport, buildings (residential and services) and agriculture, excluding the fuels used for power generation by autoproducers.

What is an energy consumption with climate corrections?

An energy consumption with climate corrections is a consumption at normal climate.

What is a number of cooling degree day?

The number of cooling degree days (CDD) is the sum over each day of the cooling period of the difference between the average outside temperature and a reference indoor temperature. The higher this number the warmer is the cooling period. The CDD value depends on the level of the reference indoor temperature (between 20°C and 23°C depending on the sources).

What is a number of heating degree days?

The number of heating degree days (HDD) is an indicator of winter severity, and thus of heating requirement. It is calculated as the sum over each day of the heating period (e.g. October to April) of the difference between a reference indoor temperature and the average outside temperature. The higher this number the colder is the heating period. The HDD value depends on the level of the reference indoor temperature (typically 18°C). The national value should be a population weighted average of meteorological stations, so as to be representative of national heating or cooling consumption rather than an arithmetic average.

Example: if the average temperature of a day is 5°C, $HDD = 13 (18 - 5)$.

What is a normal number of degree days?

The normal number of degree days corresponds a long term average of the number of heating degree days (or cooling degree days) over a period of time in the past (e.g. 25 years for Eurostat; 20 years for some countries). The number of years taken into account depend on the source. It can be calculated over a fixed period (e.g. 1980-2004 for Eurostat) or a moving period.

What is an energy efficiency indicator?

An energy efficiency indicator is an indicator used to assess the progress in energy efficiency and to measure energy savings.

What does “observed” mean for energy efficiency indicators?

An observed indicator means that it is directly calculated from observed values of consumption, i.e. without any corrections.

What are the different types of energy efficiency indicators?

Energy efficiency indicators can be indicators of specific energy consumption, of unit energy consumption, of market diffusion of efficient technologies and practices and of energy intensities, relating an energy consumption to a variable of economic activity.

Why are energy efficiency indicators usually climate corrected?

Energy efficiency indicators are climate corrected so that their variation from one year to the other is independent of climatic influences (such as a colder winter implying a higher consumption of heating).

What does energy intensity mean in ODYSSEE?

In ODYSSEE, an energy intensity is defined as the amount of energy required to produce one unit of activity expressed in monetary terms at constant prices (GDP or value added). The term “energy intensity” is sometimes used with the same meaning as specific energy consumption; this is not the case in ODYSSEE.

What is the difference between unit energy consumption and specific energy consumption?

A specific energy consumption (or specific consumption in short) is the quotient describing the total energy consumption per unit of output or service in physical unit (e.g. GJ or toe per ton of steel, kWh per m², litres of fuel per km). A unit energy consumption (or unit consumption in short) relates an energy consumption to a consumption unit (dwelling, car, refrigerator) (e.g. kWh/dwelling). In ODYSSEE, unit and specific consumption are considered as being similar and refers to energy efficiency indicators in physical units.

What are the differences between “bottom-up” and “top-down” indicators?

“Bottom-up” indicators refer to energy efficiency indicators defined at the level of individual consumers (buildings or factories, i.e. “micro level”), whereas “top-down” indicators are defined at national or regional level and are based on statistics of energy use and activity by sector, sub-sector or end-use representative of the country or region. Both types of indicators are usually expressed in the same unit (for instance kWh/m² for buildings); only their scope and interpretation differ. “Bottom-up” indicators are usually used to assess the impact of a specific energy efficiency programme. Top-down indicators assess the overall trends in energy efficiency whatever the driver (policy, prices, autonomous progress).

What is the definition of energy savings in ODYSSEE?

Energy savings calculated in ODYSSEE correspond to top-down energy savings, i.e. to savings linked to the decrease of a specific or unit consumption: they correspond to the energy not consumed because of a reduction in the indicator value. For instance if the unit consumption of refrigerators decreases from 400 to 300 kWh between 2000 and 2015 in a country with a stock of refrigerators of 2 million units, the energy savings in 2015 are equal to $(400-300) \times 2 \times 10^6 = 200 \times 10^6 \text{ kWh} = 200 \text{ GWh}$ (compared to 2000). In other words, without these savings consumption would have been 200 GWh higher in 2015.

What is the definition of final energy savings?

Final energy savings refer to the energy savings of final consumers, i.e. industry, buildings (i.e. residential and services), transport and agriculture, measures with the same definition as the final consumption (in particular to convert electricity into energy units).

What are negative energy savings?

Negative energy savings correspond to the fact that specific energy consumption is increasing instead of decreasing, which raise the energy consumption instead of reducing it as would be the case if there were energy savings. Such an increase is generally due to non-technical factors (behaviours, operational issues, as with low capacity in industry and freight transport).

What is ODEX?

ODEX (“ODYSSEE energy efficiency index”) is the indicator used to measure energy efficiency progress by sector. Its value is 100 for the base year; a value of 80 in year t means an improvement of 20%.

The detailed calculation of ODEX is explained in <http://www.odyssee-mure.eu/publications/other/odex-indicators-database-definition.html>

What are energy efficiency gains in ODYSSEE?

The energy efficiency gains measure the rate of energy efficiency improvement over a period (e.g. 20%). It is measured thanks to the ODEX.

The detailed calculation of ODEX is explained in <http://www.odyssee-mure.eu/publications/other/odex-indicators-database-definition.html>

What is the difference between gross and technical savings in ODYSSEE?

Gross savings, also called apparent energy savings, is the result of a calculation based on the observed variation of specific or unit consumption. Technical savings are corrected to account for the fact that technical efficiency cannot get worse : they are equal to the gross savings minus the negative savings; in other words they do not take into account the negative savings.

What is the meaning of annual additional savings?

Annual addition savings measure the energy savings compared to the previous year, i.e. due to the decrease of the specific or unit consumption between year t-1 and t.

What is the meaning of cumulated energy savings?

Cumulated energy savings cumulate all the savings registered year after year since a reference year.

What are the so called “energy intensive branches” in industry?

The usual energy intensive branches of industry sector considered at EU level are steel, cement, pulp and paper, chemicals and non-ferrous metals (i.e. aluminium, copper). They are called energy intensive as they represent a significant share of the total energy consumption of industry (around 2/3) and the energy expenditures represent a high share of the production cost. More information at <http://www.odyssee-mure.eu/publications/efficiency-by-sector/industry/energy-consumption-trend-industrial-branch-eu.html>

Policy

Where do I find definitions of the measure types?

You can find the definitions here: <http://www.esd-ca.eu/Media/esdca/files/private/mure-guidelines>

What are Article 7 measures?

According to Article 7 of the EED (Energy Efficiency Directive 2012/27/EU) EU Member states must set up an energy efficiency obligation scheme. This scheme requires energy companies to achieve yearly energy savings of 1.5% of annual sales to final consumers in the time period from January 1st 2014 to December 31st 2020. Alternatively the obligated countries

may implement energy efficiency policies that save an equivalent amount of final energy in this time period. These can be extensions of measures, which already were part of a NEEAP.

What is the difference between semi quantitative impact and impact evaluation?

Impact evaluation data is posted as expected total savings of the measure either in PJ Energy or kt Co₂eq. emissions (also both can apply) compared either with a fixed year or to a reference development. The semi-quantitative impact in difference is no absolute evaluation of the impact. Each measure posted to MURE is requested to have an expert judgement on its semi-quantitative impact. The exact definition of the semi-quantitative impact can be seen at “How do you evaluate the semi quantitative impact?”.

What is the difference between NEEAP measures 1 to 3?

NEEAP (National Energy Efficiency Action Plan) measures are regarding to the measures which are mentioned in the NEEAP of each EU member state. Up to now there were three NEEAPS published (2007, 2011, 2014) representing NEEAP 1-3. It is planned that every 3 years NEEAPs are published.

What do “Other” “Fixed year”, etc. mean regarding the field “Impacts: saving determined with respect to”?

“Other” and “Fixed year” relate to how the impact of the measure is determined. When it is related to a fixed year all savings are determined in comparison to that fixed year. When the impact is determined any other way the evaluation page mentions “Other” in the field.

What is the “Number of periods” referring to? (Radar Graphs)

It refers to the number of time periods you want to divide your search period into. It will divide the time period into equally long time spans which then are plotted separately.

Transport

Indicator

What does passenger-km (pkm) and tonne-kilometre (tkm) mean?

Passenger-km is the indicator used to measure the traffic of passengers by transport mode: it corresponds to the travel of one person over one km.

Tonne-kilometre is the indicator used to measure the traffic of goods by transport mode: it corresponds to the move of one tonne over one km.

What does specific consumption of cars mean?

The specific consumption of cars measures the fuel economy of a car: in Europe it is expressed in litres/100 km (l/100 km) while in Latin America it is expressed in l/100 and in USA in miles per gallon (mpg).

What is the modal shift in transport?

Modal shift represents the change in the share of each transport mode in the total traffic. It is calculated separately for passenger transport and for the transport of goods.

What is the unit consumption of road transport per car equivalent?

The unit consumption of road transport per vehicle is not a good indicator of energy efficiency as it may be influenced by a shift in the composition of the vehicle stock. For instance, if the share of motorcycles increases this will decrease the average consumption per vehicle all things being equal... and this is not linked to energy efficiency improvements.

A better aggregate indicator is the “unit consumption of road transport per equivalent car”, which relates the total consumption of road transport to a fictitious stock of vehicles, measured in terms of number of equivalent cars.

What consumption are included in the transport sector?

The energy consumption of transport only includes the energy used for motive purposes (traction) and not the consumption in transport buildings (e.g. airport, railway station); the latter being included in services. It includes the consumption of road vehicles, trains and boats and airplanes used for domestic traffic. The consumption of air planes for international traffic is included in some sources (e.g. case of Eurostat and Odyssee) and excluded in others (case of IEA).

What are public transport modes?

Public transport of passengers includes buses (urban and intercity), rail transport (metro, tramway, trains).

What is the definition of the stock of vehicles?

The stock of vehicles usually refers to vehicles that are really on the road and exclude vehicles that are no longer being used. However, in some countries this stock may also include all vehicles that have been registered if the vehicles' registry does not correct for the scraped vehicles.

What is border trade or fuel tourism?

Border trade or fuel tourism relates to the consumption of motor fuels that are purchased by foreign vehicles, mainly because of cheaper prices than in their own country. In energy consumption statistics (i.e. energy balance), this consumption of foreign vehicles appears in the energy consumption of road transport. Some countries (13 in the EU) separate in some statistics and analysis what is consumed by domestic vehicles, the so called “domestic road consumption”, and what is consumed by foreign vehicles. Such a separation is also done in Odyssee and all energy efficiency indicators for road transport are calculated on the basis of this domestic road consumption. The magnitude of the border trade is especially important in Luxemburg as it represents 80% of the consumption of gasoline and diesel (26% in Austria, 16% in Slovenia and 12% in France, over the last 5 years).

Industry

Indicator

What is the difference between value added and production index?

Both are indicators of the volume of production. The value added is the difference between the turn-over of the branch (i.e. output value) and the intermediate consumption (i.e. the consumption of raw materials and energy in monetary value); it should be measured at constant price to reflect changes in volume. The production index is based on detailed data of production in physical values at sub-branch level that are weighted to get an index at branch level. They are both produced by national statistical offices.

What do energy intensity at constant and at adjusted structure mean?

The energy intensity at constant structure is the fictive value that would have been registered if the industry structure had not changed mean: it is used in ODYSSEE for measuring the impact of structural changes on the intensity variation.

The energy intensity at adjusted structure mean is the fictive value that would have been registered if the industry structure was the same as in a reference country: it is used in ODYSSEE for cross countries comparisons.

What does structural changes mean?

In industry the sum of value added by branch is equal to the total value added. The industry structure is the share of each branch in this total. Structural changes mean that the share of each branch in the total is changing over time; this is due to different growth by branch: some growing faster than the average will see their share in the total increasing while others, with a lower growth, will see their share decreasing.

Households

Indicator

What is the consumption per dwelling scaled to EU average climate?

The consumption per dwelling of a country scaled to EU average climate corresponds to a fictive value of the consumption per dwelling of that country calculated with the EU average climate, i.e. with a fictive value of the space heating and cooling part of the consumption corresponding to the EU number of heating or cooling degree days.

Services

Indicator

What is the labor productivity?

The labor productivity measures the valued added generated per employee.

2. Methodology

All sectors

Indicator

How are the ODYSSEE data collected?

ODYSSEE data are collected by national partners and checked and harmonized by Enerdata.

How is calculated the total energy efficiency index (ODEX)?

Energy efficiency progress for final consumers is evaluated on the basis of the different ODEX by sector for industry, transport, households and services, weighted by the share of each sector in the final energy consumption.

The detailed calculation of ODEX is explained in <http://www.odyssee-mure.eu/publications/other/odex-indicators-database-definition.html>

How are climate corrections made?

Climatic corrections are done in a linear way on the space heating (H) or cooling (AC) consumption on the basis of the ratio between normal degree days and actual degree days:

$$H = H_n \times (HDD/HDD_n)$$

or $H = H_n \times (1-K) + H_n \times K \times (HDD/HDD_n)$ with K = share of heating consumption independent of climate fluctuations (e.g. 10%) and H_n the consumption at normal climate

$$AC = AC_n \times (CDD/CDD_n)$$

How energy savings are calculated in Odyssee?

Energy savings are calculated by sector from the ODEX indicator, as ODEX is equal to the ratio between the energy consumption at year t (E) and a fictive consumption that would have happened without energy savings (ES):

$$ODEX = E/(E+ES) \times 100 \rightarrow ES = E \times ((100/ODEX)-1)$$

Example: if consumption = 50 Mtoe and ODEX = 80 $\rightarrow ES = 50 \times ((100/80)-1) = 12,5$ Mtoe

Policy

How do you evaluate the semi quantitative impact?

Semi-quantitative expert estimates on measure impacts which group the measures in three categories: measures saving less than 0.1% of the sector energy consumption (low impact measures), measures saving 0.1 to less than 0.5% of the sector energy consumption (medium

impact measures), and measures saving more than 0.5% (high impact measures). For measures in the cross-cutting database the percentages refer to the overall final energy consumption of the country. These estimates have been made by the National Teams in the MURE project, who have an excellent knowledge of the policy in their countries. Nearly 90% of all measures in the database have been classified in such a manner. (See <http://www.measures-odyssee-mure.eu/MureScoreboardMethodology.pdf>)

When some policies are listed under several categories, how is the primary focus of the policy identified?

If policies are listed in multiple categories, the policy can be seen as a general cross-cutting measure with specifications for the category it is listed in. Those specifications will only be mentioned in the corresponding category. Policies without sector specific specifications will be listed in the “general cross-cutting” category.

Where do I find definitions/descriptions of evaluation methods mentioned on the quantitative evaluation page of a measure?

You may find quite comprehensive descriptions of methods regarding the evaluation of energy efficiency measures in the documents linked below:

- Energy Efficiency Program Impact Evaluation Guide:
https://www4.eere.energy.gov/seeaction/system/files/documents/emv_ee_program_impact_guide_0.pdf
- A guide to monitoring and evaluation of energy efficiency measures:
http://www.rcreee.org/sites/default/files/a_guide_to_monitoring_and_evaluation_of_e_e_measures.pdf

Transport

Indicator

How is calculated the unit consumption per car equivalent?

The unit consumption per car equivalent is calculated by dividing the consumption of road transport by a total stock of road vehicles measured in equivalent cars.

The stock of road vehicles is converted into a stock of equivalent cars on the basis of coefficients reflecting the difference in the average yearly fuel consumption of each type of vehicle compared to a car:

- If, for instance, a motorcycle consumes 0.2 toe/year on average and a car 1 toe/year, one motorcycle is considered to be equivalent to 0.2 cars.
- In the same way if light vehicles and trucks consume on average 5 toe/year each vehicle for road transport of goods is equivalent to 5 cars.

Default values can be used for these coefficients or national data if national surveys or evaluation exist on the consumption of cars, trucks...

What is the best indicator to analyse energy efficiency trends of cars?

For cars three main indicators can be used to characterise their energy efficiency:

- the specific energy consumption in litres/100 km (l/100 km), also expressed in km/l in America (in miles per gallon or mpg in the US);
- the specific energy consumption in energy unit in GJ/km (or koe/km);
- the specific consumption per passenger-km in MJ/pkm (or goe/pkm).

The first indicator (litre/100 km) shows the effect of technological improvements, driving behaviour and fuel shift.

The second indicator (MJ or koe/km) takes in addition into account changes in the fuel mix (i.e. in the average calorific value of motor fuels, in Joule or toe/litre). This fuel shift can come from a substitution between gasoline and diesel or from the penetration of biofuels. If the focus is on actual vehicle improvement, this fuel shift effect should be isolated by defining separate indicators for the different fuels, e.g. for diesel, gasoline etc...

The third indicator (MJ/passenger-km) takes in addition into account changes in the average occupation rate of cars (for instance because of carpooling). The effect of changes in car occupancy can be calculated by comparing the trend of the two last indicators.

As energy efficiency should preferably be measured in energy units and as there exist policies on carpooling to improve the efficiency of cars, it is recommended to use the third indicator.

Industry

Indicator

How many branches are part from the industry sector in Odyssee?

Industry is made of mining, manufacturing, construction and electricity, gas & water. Manufacturing is made of 14 branches.

How is the energy intensity of industry at adjusted structure calculated?

For a given country, the energy intensity of industry at adjusted structure (of a reference country) is calculated as the sum over each sub-sector i (i.e. industrial branch) of the multiplication of the observed energy intensity of sub-sector i (EI_i) of that country (i.e. energy consumption per unit of value added) by the share of sub-sector i in the total value added of industry of the reference country (VA_i/VA).

$$= \sum_i \left(\frac{VA_{i,ref,t}}{VA_{ref,t}} \right) * EI_{i,t} - 1$$

What are the different energy efficiency indicators in industry?

In industry, energy efficiency indicators should preferably be expressed in physical units (eg. toe, GJ per tonne). For industry sub -sectors (i.e. branches) for which there is not a dominant product, the energy consumption can be related to the index of production, as this index is deemed to represent the physical production of a branch. Another indicator is also used to compare the energy performance of industrial branches is the energy intensity (i.e. energy consumption per unit of value added). This is the case for the calculation of the energy intensity of industry at adjusted structure.

How is calculated the energy efficiency index (ODEX) in industry?

The energy efficiency index in industry combines the energy efficiency trends by branch in one index (industry ODEX).

Energy efficiency trends by branch are measured from the variation of specific energy consumption, expressed in toe/t (or GJ/t) for energy intensive branches (steel, cement, pulp and paper) and toe (or GJ) per unit of production index (IPI) for the other branches.

To account for the different units used, all specific consumption is then expressed in index.

The industry ODEX is then calculated by weighting the indices of specific consumption by branch with the share of each branch in the industry sector's energy consumption.

Up to 15 branches are considered for industry ODEX. The detail calculation is explained in <http://www.odyssee-mure.eu/publications/other/odex-indicators-database-definition.html>

Is ODEX cleaned from structural changes?

As ODEX is calculated by taking into account energy efficiency trends by branch, ODEX is not affected by structural changes between the different branches. It may however be influenced by structural changes within the branches (e.g. chemicals).

The detailed calculation of ODEX is explained in <http://www.odyssee-mure.eu/publications/other/odex-indicators-database-definition.html>

Households

Indicator

Why energy consumption by end-use does not exactly match with total households consumption?

The estimate of the consumption by end-use usually apply to permanently occupied dwellings. Total household consumption may include the consumption of summer and week-end houses and, depending on the countries, some energy consumption for heating and lighting of common spaces in multi-family buildings.

Services

Indicator

What is the indicator used to measure energy savings in services sector in Odyssee methodology?

In Odyssee, the energy savings in services sector are calculated from the variation of the unit consumption per employee; a unit consumption per m² of floor area would be more relevant but not enough countries can provide data on the floor area.

3. Interpretation

All sectors

Indicator

Why economic related indicators (intensities) are compared at purchasing power parities?

For countries' comparison, energy intensities have to be measured in the same monetary unit (€, \$) by converting national currencies in €, \$. The conversion with market exchange rates raises two problems:

- Market exchange rates vary quite a lot independently of the economic performance of countries which affect the relative energy intensity values between countries (their “ranking”);
- The conversion does not reflect the fact that in less developed countries consumer prices are on average much lower than in more developed countries

The use of Purchasing Power Parities (PPP) improve the comparison as it does not fluctuate and accounts for the real purchasing power of incomes.

Policy

What is the difference between labels and MEPS?

MEPS is the abbreviation for “minimum energy performance standard”. MEPS are used to give minimum performance or efficiency requirements for different devices or constructions such as electric engines, cars or buildings. As long those requirements are fulfilled, the device or constructions follows the MEPS. The use of labels differs to MEPS in such a way that it does not require minimum performances. It rather grades the performances of devices or constructions. Exemplary for this is the “EU Energy Label”. Good performances are graded higher than bad ones.

Labels and MEPS can also be combined. For example, governments can enact policies which only allow the sale of devices which have at least a performance with a certain minimal grading.

How does “General Cross-Cutting” differ from “All Sectors”?

“General Cross-Cutting” is only listing measures which are applicable for multiple sectors, while the category “All Sectors” lists all measures of all sectors regardless of applicability.

What is the difference between the search by period, period weighted by semi-quantitative impact and semi-quantitative impact?

The search by period in the radar graphs tool shows the number and type of measures issued or proposed starting from the selected starting year. Depending on the selected number of periods the years are divided into different time periods.

When the period graph is weighted by the semi-quantitative impact the measures in the time periods get weighted depending on the semi-quantitative impact which was given to them (low, medium, high).

The search by semi-quantitative impact shows the number of measures with high, medium or low semi-quantitative impact, depending on the selected starting year.

What is the difference between semi quantitative impact and impact evaluation?

Impact evaluation data is posted as expected total savings of the measure either in PJ Energy or kt Co2eq. emissions (also both can apply) compared either with a fixed year or to a reference development. The semi-quantitative impact in difference is no absolute evaluation of the impact. Each measure posted to MURE is requested to have an expert judgement on its semi-quantitative impact. The exact definition of the semi-quantitative impact can be seen at “How do you evaluate the semi quantitative impact?”.

Transport

Indicator

What is the best economic indicator to measure activity in the transport sector?

Transport energy consumption results from the activity of various modes of transportation. Therefore, there is not a good sectorial indicator of activity. The value added of transport only refers to the activity of transport companies, which drives part of the consumption of trucks and all the consumption of rail, water and air transport. All the consumption of cars and light duty vehicles has nothing to do with the value added of transport sector, which represents almost half of the consumption of the sector. Therefore the best economic indicator to measure the activity of the transport sector is the GDP.

Why did the specific consumption of new cars decreased faster since 2007?

The reduction in the specific consumption of new cars has accelerated since 2007 (- 3.7% per year compared to 1.5% between 2000 and 2007 at EU level), mainly because of EU regulations on labelling and emission standards and national fiscal policies promoting the purchase of low emission cars (see the trends at <http://www.odyssee-mure.eu/publications/policy-brief/transport-efficiency-trends.html>).

Why did the share of public transport in passengers traffic decrease for countries in Eastern Europe between 2000 and 2014?

The opening of the economies in Eastern European countries in the mid 90's resulted in a fast progression of car ownership and, as a result, in a lower use of public transport.

Why the unit consumption of trucks per tonne-km increased during the economic crisis?

Energy efficiency progress has slowed down for trucks and light goods vehicles since 2005 and even has virtually stopped since 2007: the fall in freight activity (by 2.5%/year over 2007-2012)

led to less efficient operation of the vehicle fleet (trucks less loaded with increased empty running).

What is the impact of the load factor in transport energy efficiency?

The impact of load factor depends on the indicators used to measure energy efficiency. For cars an increase in the load factor will reduce the consumption per passenger-km but not the consumption in litre/100 km or in goe/km. If the first indicator is used, an increase in the load factor results in energy efficiency improvement. With the two other indicators, there is no impact on energy efficiency. The same reasoning applied for trucks (i.e. road transport of goods).

Households

Indicator

Why is consumption of electrical appliances per dwelling increasing over the last decades?

The consumption of electrical appliances per dwelling is mainly determined by two main drivers: on the one hand, the change in the number of appliances owned per households (“equipment ownership”), that contribute to raise that consumption (“activity effect”); on the other hand, the variation in the average annual consumption per appliance (“specific consumption”), that usually contributes to reduce this consumption due to the increased efficiency of appliances (“efficiency effect”). In the last decades, the activity effect has been greater than the efficiency effect, mainly because of the spread of a variety of small appliances resulting in an overall increase in the consumption of electrical appliances per dwelling. For more information see <http://www.odyssee-mure.eu/publications/efficiency-by-sector/households/energy-consumption-large-appliances-dwelling.html> and <http://www.indicators.odyssee-mure.eu/decomposition.html> (sector household; sub-sector electrical appliances).

Services

Indicator

Why few information are available by sector in the service sector in Odyssee?

In this sector there is generally a lack of disaggregated data by sub-sector and by end-use. Little effort has been done so far to improve the situation as it consumed a small part of the consumption, for instance compared to industry, where there is a long tradition of surveys to get data by industrial branch.

4. Tools

All sectors

Indicator

What are the most successful countries in terms of penetration of efficient technologies and end-use renewables?

Go to the market diffusion tool <http://www.indicators.odyssee-mure.eu/market-diffusion.html> and select the technology or equipment you are interested in.

What are the reasons of the energy consumption variation between year t_0 and t ?

Go to the decomposition tool <http://www.indicators.odyssee-mure.eu/decomposition.html> and select the country, sector (and sub sector) and period (t_0, t) you are interested in.

What has been the impact of economic growth on the energy consumption variation?

Go to the decomposition tool <http://www.indicators.odyssee-mure.eu/decomposition.html> and select the country, sector (and sub sector) and period (t_0, t) you are interested in: the impact of economic growth is given by the activity effect.

Why the primary and final energy consumption have a different variation?

Go to the decomposition tool <http://www.indicators.odyssee-mure.eu/decomposition.html> and select the country, “primary” as sector and period (t_0, t) you are interested in.

What has been the impact of the penetration of renewables in power generation on the primary energy consumption?

Go to the decomposition tool <http://www.indicators.odyssee-mure.eu/decomposition.html> and select the country, “power” as sector and period (t_0, t) you are interested in.

How can I compare the energy efficiency performance of country with reference countries?

Go to the benchmarking tool <http://www.indicators.odyssee-mure.eu/benchmarking.html> and select the country x and the reference countries to which you want to compare, then the sector and indicator you are interested in.

How can I compare the energy intensity of the GDP of different countries?

Go to the benchmarking tool <http://www.indicators.odyssee-mure.eu/benchmarking.html> and select the country x and the reference countries to which you want to compare country x , then “macro” as a sector and select primary or final intensity.

How far is the country compared to its 2020 target on energy consumption?

Go to the energy savings tool <http://www.indicators.odyssee-mure.eu/energy-saving.html> and select the country, select item primary or final consumption.

What is the potential for energy consumption reduction in 2030?

Go to the energy savings tool <http://www.indicators.odyssee-mure.eu/energy-saving.html> and select the country, select item primary or final consumption; the difference in 2030 between the high and low value indicate the potential of reduction.

What energy savings have been achieved with final consumers?

Go to the energy savings tool <http://www.indicators.odyssee-mure.eu/energy-saving.html> and select the country, select item energy savings.

What are the target for the primary and final energy consumption for 2020?

Go to the energy savings tool <http://www.indicators.odyssee-mure.eu/energy-saving.html> and select the country, select item primary or final consumption.

What is the range of energy consumption projections for 2030?

Go to the energy savings tool <http://www.indicators.odyssee-mure.eu/energy-saving.html> and select the country, select item primary or final consumption.

How can I rank the countries performance in terms of energy efficiency?

Go to the energy indicator scoreboard <http://www.indicators.odyssee-mure.eu/energy-efficiency-scoreboard.html>, select ranking and the sector for which you want to score the countries.

Which countries have the best energy efficiency performance?

Go to the energy indicator scoreboard <http://www.indicators.odyssee-mure.eu/energy-efficiency-scoreboard.html>, select ranking and the sector for which you want to score the countries.

Policy

Why is the user allowed to modify the values of interaction between policies and why are only some fields editable?

The policies interaction tab is meant for users which want to evaluate the interaction and impact of different policies. Therefore they are allowed to change values of energy savings, interaction between the policies and the measure types. Additionally they are allowed to select the targeted end-user. The non-editable fields are either calculations based on the changed input, fixed inputs given by the measure (measure title, qualitative impact) or impossible measure interactions.

How does the difference between impacts with and without interaction occur in the policy interaction tool? (Policy interaction)

When looking at impacts without interaction, each measure is evaluated separately on its impact for energy efficiency/savings. But often the measures are related to each other and influence their impact on energy efficiency. Those interactions of measures can have a positive or a negative effect. If for example two measures have some overlap in their target, their efficiency is likely to be reduced since both measures will have a similar effect. On the other hand, one measure can reinforce another measure so that it has a higher efficiency on energy savings.

Can I specify a key word when querying the database (e.g. only search for financial measures on SMEs)?

Yes. In the database query tab click the “More Options” button. There you can choose things like “Actors”, “Target Audience”, “Evaluation Method”. Also, it allows you to filter for NEEAP measures and other things.

What are the search forms referring to in the data base query forms? How do I use them?

The database query part of MURE allows you to search the database by two different ways: Search by text on measure type, title, reference, which refers more to the “meta data” of a measure. The “search by text on measure description (PDF)” allows you to search all detailed measure descriptions in full text by the key words you are interested in. Keep in mind, that the full text search of all measures of a sector can take quite some time. Thus, it might be quicker to search by meta data, such as title or type first.

Why is « All Sectors » not available in the radar graphs tool?

Every sector in the MURE database has a specific set of policy types, which overlap to some extent. A visualization over all sectors cannot deliver the information intended, as it would lead to unclear picture of the distribution of policy types.

Transport

Indicator

Which countries have the highest development of public transport for passengers?

Go to the market diffusion tool <http://www.indicators.odyssee-mure.eu/market-diffusion.html> and select “modal shift”.

What are the different explanatory factors of energy consumption variation in transport?

Go to the decomposition tool <http://www.indicators.odyssee-mure.eu/decomposition.html> and select the country, “transport” as sector and period (t0,t) you are interested in.

Industry

Indicator

How can I compare the energy intensity of industry of different countries?

The energy intensity level of industry of country X is influenced by energy intensity levels of each branch and by the industry specialization of country X (i.e. the share of the different branches in the total value added or industry structure). Therefore, to have a meaningful comparison of country X with reference countries, it is better to correct for the specialization factor by comparing the energy intensities with the same industry structure: this is done by comparing the energy intensities at adjusted structure.

For that purpose you can use the benchmarking tool <http://www.indicators.odyssee-mure.eu/benchmarking.html> for the industry sector.

Households

Indicator

How can I compare the smart meters diffusion between European countries?

Go to the market diffusion tool <http://www.indicators.odyssee-mure.eu/market-diffusion.html>

What are the different explanatory factors of energy consumption variation in residential sector?

Go to the decomposition tool <http://www.indicators.odyssee-mure.eu/decomposition.html> and select the country, “household” as sector and period (t0,t) you are interested in.

How can I compare unit consumption of households of country X with reference countries?

Go to the benchmarking tool <http://www.indicators.odyssee-mure.eu/benchmarking.html> and select the country x and the reference countries to which you want to compare country x, then select sector “households”. This tool will adjust this unit consumption of households to the same climate and dwelling size so have a more meaningful comparison.

Services

Indicator

What are the different explanatory factors of energy consumption variation in services sector?

Go to the decomposition tool <http://www.indicators.odyssee-mure.eu/decomposition.html> and select the country, “services” as sector and period (t0,t) you are interested in.

